

## ABSTRACT

A map holding unit (89) holds, in the form of a map, a voltage control amount ( $V_{q\_map}$ ) of the q axis in a case where no demagnetization of a permanent magnet motor (60) occurs. Based on a motor revolution number, namely the number of revolutions of the motor (MRN) provided from a revolution number detection unit (81), a demagnetized state calculation unit (91) calculates a rotational angular velocity ( $\omega$ ). Then, based on the voltage control amount ( $V_{q\_map}$ ) from the map holding unit (89), a voltage control amount ( $V_q$ ) to be controlled that is provided from a PI control unit (86) and the rotational angular velocity ( $\omega$ ), the demagnetized state calculation unit (91) calculates an amount of demagnetization (=  $(V_{q\_map} - V_q) / \omega$ ) and outputs, if the amount of demagnetization is greater than a predetermined value, an operation signal (OPE) for controlling the operation of the permanent magnet motor (60).